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Abstract

Background: In 2015, the Department of Veterans Affairs (VA) nationally implemented a transgender e-consultation (e-consult) program with expert clinical guidance for providers.

Objective: This mixed-methods project aimed to describe providers' program experiences, reasons for not using the program, and how to improve program use.

Methods: From January to May 2017, 15 urban and rural VA providers who submitted at least one e-consult in the last year participated in semi-structured interviews about their program experiences that were analyzed using content analysis. From November to December 2017, 53 providers with transgender patient encounters but did not utilize the program participated in a brief online survey of reasons for program non-use and facilitators encouraging use.

Results: Qualitative analysis found providers learned of the program through email, colleagues, the Electronic Health Record (EHR) system, and participation in VA LGBT committees/educational trainings. Providers used the program for establishing a care plan, hormone therapy recommendations, sexual and reproductive health education, surgical treatment education, patient-provider communication guidance, and second opinions. Facilitators of use included understandable recommendations, ease of use through the EHR system, and being the only transgender resource for rural providers. Barriers to use included time constraints, communication-related problems with e-consult, impractical recommendations for under-resourced sites, and misunderstanding e-consult purpose. Improvement suggestions included adding concise/sectioned responses, expanding provider/patient program awareness, designating a follow-up contact person, and increasing provider education about transgender Veterans and related care. Quantitative analysis found common reasons for not using the program were: not knowing about it (54%), not needing to use it yet (32%), and getting help from a colleague outside of e-consult (24%). Common suggestions to improve program use were: more information about where to find e-consult in the chart, guidance on talking with patients about the program, and e-mail announcements to improve provider awareness of the program. Post hoc exploratory analyses showed no differences between urban and rural providers.

Conclusions: The VA transgender e-consult program is useful to providers, but there are several barriers to implementing recommendations, some of which are especially challenging for rural providers. Addressing noted barriers and enhancing the facilitators may improve program use and improve quality care for transgender Veterans.

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program. Post hoc exploratory analyses showed no differences between urban and rural providers.

Conclusions: The VA transgender e-consult program is useful to providers, but there are several barriers to implementing recommendations, some of which are especially challenging for rural providers. Addressing noted barriers and enhancing the facilitators may improve program use and improve quality care for transgender Veterans.

Key words: transgender persons; teleconsultation; telemedicine; Veterans; Veterans health

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INTRODUCTION

Transgender is an umbrella term that encompasses individuals with gender identities (i.e., the core sense of self as male, female, both, or neither) that conflict with societal prescriptions of masculinity and femininity associated with sex assigned at birth. Transgender individuals experience numerous health disparities [1], including health risk (e.g., victimization [2], health outcomes (e.g., depression, HIV [3]), and barriers to health care access [4], all of which can create complex care needs. Moreover, transgender individuals often require medical care specific to their gender affirmation (i.e., having their lived gender experience reflect their gender identity), including mental health services, evaluations for hormone therapy, prescription and monitoring of hormones, gender affirming surgery and post-operative care, and specialty services such as urology, endocrinology, and speech therapy [5]. In addition to specific services, there are unique needs related to documentation, particularly around sex assigned at birth, which health systems often link to other important medical services, including lab test values, medication dosages, and critical health screens such as breast or prostate exams. Awareness of care for transgender patients continues to grow, but health system-level efforts to improve transgender patients' care is a nascent field. Specifically, there is a paucity of formative research on how providers can collaborate with specialists to obtain expert clinical guidance on transgender-specific care for their transgender patients [6].

Achieving equity in health and health care, irrespective of gender, is a specific objective for the Department of Veterans Affairs (VA) [7]. Moreover, VA has a greater prevalence of transgender individuals than United States (US) population estimates [8], and the transgender Veteran population has increased annually in the VHA over the last decade [9]. Recognizing the need to serve transgender Veterans, VA issued a national policy on health care for transgender Veterans in 2011. To increase VA's capacity to provide high quality care to transgender Veterans, the Lesbian, Gay, Bisexual, and Transgender (LGBT) Health Program within the VA Office of Patient Care Services developed a transgender e-consultation (e-consult) program to provide expert clinical guidance for

VA health care providers; the program was implemented nationally in April 2015 and previously was described [10].

Generally, e-consultation provides expert knowledge from an interdisciplinary team to providers through technology for conditions where experts may not exist locally [11]. The VA's program allows transgender Veterans to receive health care from their local providers with remote support from experts in transgender health care, thus reducing or eliminating the need for Veterans to travel to tertiary VA sites for care. Three sites comprise interdisciplinary teams with expertise in transgender health care: Minneapolis, Tucson, and Loma Linda. Each expert team is comprised of at least 4 members (e.g., primary care physician, psychologist, social worker, nurse, endocrinologist, and/or pharmacist). Consults typically serve 4 main topics: mental health evaluation and hormone readiness (e.g., questions about diagnosing gender dysphoria and assessment for readiness for gender affirming surgery and/or hormone therapy); psychotherapy (e.g., gender counseling and/or gender-informed treatment for comorbid conditions); primary medical questions (e.g., addressing expected outcomes, medical risks, and recommended monitoring of gender affirmation pharmacologically and medically); and prescribing hormone therapy (e.g., how to safely prescribe hormone therapy for gender affirmation).

As a relatively new resource to VA providers, there is a critical need for formative evaluation that can guide future implementation research [12] (e.g., examining how this program serves system needs and exploring how the program can be improved through minor adjustments). Ultimately, understanding the processes and outcomes of the VA transgender e-consultation program are critical for measuring its impact on enhancing care for transgender Veterans. This project aimed to 1) describe providers' program experiences through qualitative inquiry, and 2) determine reasons for not using the program and how to improve program use through a quantitative survey.

METHODS

Human Subjects Protections

The qualitative activities reported here were conducted as part of a quality improvement initiative with the directors of VA's LGBT Health Program in the Office of Patient Care Services, as such, no human subjects approval or informed consent to participate were required. The quantitative portion was approved by the Institutional Review Board of the VA Pittsburgh Healthcare System.

Qualitative Methods

We received the LGBT Health Program's list of unique VA providers who used the VA transgender e-consult program from the program's national launch in April 2015 through December 2016. We categorized the provider roster by urban and rural sites based on urban-rural definitions from the VA Office of Rural Health [13]. We then randomly selected 32 users from urban sites and 34 users from rural sites. In January 2017, the selected providers received a recruitment email from the LGBT Health Program that explained the project goals and invited them to participate in a 20-30-minute semi-structured phone interview to discuss their experiences with the transgender e-consult program. Approximately 1 week later, a project team member sent a follow-up email to those providers and reached out via direct phone calls. These efforts resulted in interviews with 3 urban and 6 rural providers. In May 2017, this process was repeated for providers who had not yet participated, resulting in additional interviews with 1 urban and 5 rural providers (for a total of 4 urban and 11 rural provider interviews).

With guidance from those who direct and administer the e-consultation program, we developed a semi-structured interview guide based on the needs they highlighted as most germane. The initial set of guiding questions included: How did providers learn about the availability of e-consultation? How useful was the e-consultation response? How did the treatment plan change as a result of the consultation? Were there provider-perceived changes in patient outcomes as a result of the consultation? What were the challenges/limitations of the e-consultation program? From the

guiding questions, the project team developed and finalized an interview guide with open-ended questions and additional probes to direct deeper inquiry. From January to May 2017, a trained interviewer conducted the interviews, which were audio recorded and transcribed for analysis.

Microsoft Word was used to transcribe the audio recordings verbatim to identify categories across interviews. The interviews were analyzed using conventional qualitative content analysis [14]. Using inductive analysis, the narrative text was reviewed using open coding. The coder read and re-read the interview transcripts multiple times to develop and refine categories to describe health care providers' experiences using the e-consult program. The lists of categories were sorted and grouped according to similar content regarding various aspects of their experiences using the program under higher order headings, with reductions of the data by content areas.

We approached quality control and bias mitigation in a number of ways. First, an experienced qualitative researcher reviewed the codebook prior to the completion of the coding process. Second, the same researcher reviewed a 20% (i.e., 4 transcripts) sample of coded transcripts to ensure the transparency and comprehensibility of how codes were applied. The results were then reviewed and discussed by the larger multidisciplinary study team before being finalized.

Quantitative Methods

For the survey portion of our project, VA administrative data were extracted from April 1, 2015 through April 1, 2017 for all inpatient and outpatient visits in which a transgender-related International Classification of Diseases (ICD)-9 or ICD-10 diagnosis code was noted for the visit (e.g., gender identity disorder, transsexualism, personal history of sex reassignment). For each visit, the names of all unique providers who noted the diagnosis code were extracted to create a census of providers who encountered a transgender patient during the study period. The list of providers who had used the transgender e-consult program during the study period was cross-referenced with the total list of providers who saw a transgender patient, and the providers who used e-consult were

removed. The remaining providers represented the eligible sample of providers who, during the study period, had encounters with transgender patients but did not utilize the e-consult program (n=14,502). Of the eligible providers, a simple random sample of 300 providers was drawn, regardless of provider type (e.g., social worker, primary care physician, etc.). Their email addresses were manually gathered from the VA's global contact list. Email addresses were available for 279 providers (93%), which comprised the analytic sample for this project. Providers received a recruitment email on November 13, 2017 that explained the purpose of the research project and provided a link to a brief 9-item survey on VA's internal network via REDCap. Two weeks later (November 27), a second recruitment email was sent to all providers who had not completed the survey.

The brief online survey asked VA providers to identify their discipline: e.g., social worker, psychologist, psychiatrist, primary care physician, primary care nurse practitioner, endocrinologist, speech therapist, nurse, or other. Persons indicating "other" were asked to supply free text to explain their answer. Providers were asked if, before beginning work with the VA, they ever had any training about providing health care to patients who were transgender; responses options were: yes, 1 hour; yes, 1-3 hours; yes, 3 hours or more; and no. Using the same response options, a similar question asked participants if they ever had training during their time working for the VA. Providers also indicated the number of transgender patients they had cared for in the last 12 months. Lastly, providers were asked, "Based on your own perception of the VA facility in which you do most of your work, how would you classify your VA facility? Urban, rural, or highly rural."

Three questions focused on the transgender e-consult program. First, providers indicated if they had ever used the program. For individuals who indicated "yes," they were thanked for their participation and the survey ended. Individuals who indicated that they had not used the e-consult program received two additional questions. The first asked what sorts of things prevented them from using the program, and choice options included: I did not know about it; I do not know how to access

it; I have not needed to use it yet; I am comfortable with my level of knowledge with transgender care; my patient(s) told me they did not want me to use it; I have a colleague I can call on for help; template takes too long to complete; other. The second item asked providers what would encourage them to use the program. Response options included: More information about where to find e-consultation in the chart; have more time to complete an e-consult; seeing more transgender patients; VA-wide email announcements about the program; guidance on how to talk with patients about the program; other. For both items, providers could indicate more than one choice, and persons indicating "other" were asked to supply free text to explain their answer.

For the scope of this project, three key variables about the providers were summarized: VA facility where provider is located, the number of unique transgender patients they encountered over the study period (i.e., 1, 2, 3, ≥4), and the number of encounters they had with transgender patients over the study period (i.e., 1, 2,…≥10). Univariate statistics were used to describe the sample. Chi-square tests of independence and t-tests were used to examine categorical and mean differences, respectively. All quantitative analyses were conducted using Stata/SE version 14.2.

RESULTS

Qualitative Evaluation

Participant Characteristics

The fifteen interview participants were mostly primary care providers (80%), practiced at VA for 10+ years (47%), categorized their current VA facility as rural (60%), had no transgender-specific training (60%), saw one transgender patient in the last year (40%), and said the program has been 90-100% useful for their specific needs (47%) (Table 1). Among the total sample of participants, there were 27 e-consults, with the majority (60%) using the program at least one time.

Table 1. Characteristics of the 15 providers from qualitative interviews

Characteristic	n
Type of VA Health Care Provider	
Primary Care	12
Mental Health	3
Transgender-Specific Training (in VA and non-VA settings)	
No	9
Yes	6
Years in Practice at VA	
0 ≤ 3 years	3
3 ≤ 5 years	2
5 ≤ 7 years	1
7 ≤ 10 years	2
10+ years	7
Number of Transgender Patients in Last Year	
1	6
2	3
3	3
4	2
5	1
Number of E-consults Placed	
1	9
2	4
3	1
4	0
5	0
6	0
7	1
Usefulness of E-Consult Program	
90-100%	7
80 ≤ 90%	4
70 ≤ 80%	1
60 ≤ 70%	1
50 ≤ 60%	0
≤ 50%	1
No answer	1
Location Area of Facility (participant self-report)	
Rural	9
Urban	3
Suburban/mix	2
No answer/not asked	1
Location Area of Facility (defined by Office of Rural Health	
Rural	11
Urban	4

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Fourteen VA health care providers participated in a telephone-based interview; one participant sent written responses via email because they could not schedule an interview. The longest interview was 30 minutes, 19 seconds, and the shortest was 7 minutes, 36 seconds; the mean interview time was 18 minutes 9 seconds. Six major areas were identified: 1) how providers learned about the e-consult program, 2) reasons for using the program, 3) results of using the program, 4) facilitators of using the program, 5) barriers to using the program, and 6) suggestions for improving the program. Table 2 includes exemplar quotes for each of the following categories identified during qualitative analyses.

Table 2. Qualitative findings among providers using the VA transgender e-consult program

Categories	Quotation Examples
Topic 1: Ways providers learned of the program	
Email notification	"There was an email with a flyer"
Told by other staff members	"My pharmacist or my mental health provider at the clinic showed me how to access that consult."
Found While Using Electronic Health Record (EHR) System	"Through the VA Consult Program, …through the orders, you can go to the e-consult request and order sections in the records and there's 'Transgender E-Consults' you can click on."
Participation in VA LGBT activities and educational trainings	"Through one of those lectures that we got about transgender care."
Topic 2: Reasons for using the program	
Establish a care plan	"My experience with the gender reassignment is extremely limited."
Recommendations about hormone replacement therapies	"I was having too much testosterone and I needed to… see if I was doing something not quite right. They gave me some tips like, 'Yes, we want this level for the testosterone in order for…transition.'"
Education about sexual and reproductive health care	"I wasn't sure how to screen her because I didn't know… how often to get her a mammography."
Education about surgical treatment options	"What options we might have available for surgical interventions."
Guidance regarding patient-provider communication	"I typically will ask about what types of responses should I expect…What should I tell patients about what type of breast size increase they may expect."
Second opinion	"This fellow is a senior and he's got multiple medical problems and he's on anticoagulants, and lots of cardiac issues, and hormones would be a really bad idea. [I used the consult to] just evaluate him and see if he's a candidate."
Topic 3: Results of using the program	
Care plan modifications	"It was helpful for outlining starting medicines and then

	following the intervals for following those with laboratories.”
Increased provider comfort with and confidence in transgender care provision	“They actually had a template to walk someone through it. And it was exceptional. Because, while I have worked with this population before, I really, at that point, wasn’t comfortable starting from scratch in the assessment.”
Improved patient-provider relationships	“I thought [the e-consult] did ask questions that kind of allowed me to ask the patient more questions. So, it kind of delved a bit, so that if you are new to it….”
Continued use of e-consult program	“I’ve only offered it to the one patient, but on multiple occasions.”
Topic 4: Facilitators of using the program	
Responses contain understandable and informative recommendations	“I do exactly what they say, and if it doesn’t work they say ‘This is the next step you should take.’ They’ll say, ‘Go ahead and give us a call back.’”
Accessibility and ease of program use by providers through the EHR	“It was just on our primary [EHR] page, so it was really easy to find… When we put in for consults, it’s on the very main screen.”
Quick response to e-consult request	“They answered my inquiry right away.”
Provider knowledge of the program’s existence	“Knowing it was out there.”
Only available transgender-specific resource for providers at rural sites	“I don’t have much of a choice. The only resource we have is to use the e-consult.”
Topic 5: Barriers to using the program	
Time-consuming process for provider to submit e-consult and read through recommendations	“They pull in parts of notes from the mental health evaluation, from my evaluation, from all sorts of things. So, the note is not clear when it comes back… They probably have a dozen pages where they [explain] hormone levels, when they should be checked… It’s meant to prevent re-consult, which is frustrating. It’s very cumbersome…all that stuff just automatically gets tacked onto the bottom of the consult.”
Previous e-consult response did not answer question asked	“One of the responses I received in the e-consult was that I should become an advocate and get more programs. And, honestly, that answer left me feeling demoralized. It was just unrealistic given my workload.”
Communication-related problems with e-consult	“It’s not really clear from the consult, they want you to submit another e-consult…sometimes you may, six months later, have a question…that may require the submission of a new e-consult [rather than just adding a comment to the existing consult].”
Impractical e-consult recommendations	“The recommendation [to] see the patient back in a couple months and the follow-up intervals they recommended, to be honest I can’t accommodate.”
Provider misunderstanding of e-consult purpose	“I just don’t know why they didn’t take the case and take over.”
Lack of provider understanding	“I had been kind of thinking of her as a man in my

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of transgender patients and their specific health care needs	head… I had been seeing her for about a year before I had even thought about this…. I think it was just a lack of awareness.”
Topic 6: Suggestions to improve the program	
Adding concise and sectioned e-consult responses	“Appropriate hormone levels, intervals for checking labs, any changes in preventative care, if those were in separate sections. Because now…it’s just kind of merged into one on-going paragraph.”
Expanding provider and patient awareness about the program	“Perhaps market it more…I’m pretty sure not a lot of people know it exists.”
Designating a contact for follow up after e-consult	“To have a contact person who I could have more of a dialogue with. There were multiple people contributing to the e-consult, but no one contact person that I could ask logistical questions.”
Increasing provider education about transgender veterans and transgender-specific health care	“Maybe a little more education on the consult… the consult education was provided after they…look at things and then they were like, ‘Oh, well, this was what you needed to do.’ But if, in the consult itself, you list all of the pre-requisites that are necessary [for transitioning].”
Clarification for providers on e-consult operational processes and timelines	“Some idea of the turnaround process would have been helpful.”

Ways Providers Learned of the E-Consult Program

Providers commonly cited receiving information about the program through an email from VA’s LGBT Health Program. Local providers or colleagues, such as a pharmacist, mental health provider (e.g., psychologist), and gynecologist, also educated interviewees before the e-consult was placed and when a provider asked for assistance or advice through “word of mouth.” Providers also learned of the program by seeing ‘Transgender E-Consultation’ as an option in the VA EHR. Some providers saw it when entering an e-consult request in a different specialty area, while others saw it while going through orders. Others learned about the program through participation in local VA LGBT-specific activities or educational lectures for providers about transgender care.

Reasons for Using E-Consult Program

Providers used the program to help create an individual patient care plan, particularly those

with “extremely limited” transgender care experience. Some examples focused on gender affirming medical care, including determining whether the patient was a good candidate for medical transitioning, and what monitoring was necessary during the transition process. Others sought recommendations about hormone therapies. Although there were “general medication questions,” most asked specific questions about appropriate medication doses and adjustments so they could optimize therapeutic outcomes and address safety concerns (e.g., potential adverse effects). Providers also used the consult for education about sexual and reproductive health to help make care decisions, such as standard preventative health screening tests (e.g., mammograms for transgender women) and gynecology for transgender men. Others desired education about available surgical treatment options (e.g., breast augmentation, bilateral mastectomy). Providers also sought guidance regarding communication with transgender patients, such as what they should tell patients about hormone therapy and what responses to expect in return. E-consults also provided a second opinion for uncertainty about a health care decision, especially in complex cases or those involving greater risk. Consults were said to be especially helpful when they confirmed what the provider already told the patient or helped bolster provider decisions that went against patient preferences.

Results of Using the E-Consult Program

Providers sometimes modified care plans for their transgender patients after getting an e-consult response, including obtaining a formal diagnosis for a patient. Modifications included adding recommended Gender Dysphoria evaluations, health screenings, medication monitoring, and meeting standard time frames for follow-up care. Most treatment plan changes related to dosing for hormone therapy and adding specialist referrals. Providers who used the program became more comfortable and confident in their assessments and in relaying testing and treatment decisions for transgender patients. Some providers discussed feeling relatively confident in their judgment before the e-consult, but getting a second opinion confirmed what they discussed and decided with the patient. E-

consults helped improve patient-provider relationships by placing those interactions and care provision in line with the gender (i.e., body, identity, expression) of their patients. Providers mentioned that e-consults also gave patients added motivation to follow recommendations because experienced providers were involved. Communication during clinic interactions was also improved because the e-consult request requires providers to answer a number of questions about the patient, which, in turn, directed them to gather additional relevant information from the patient during their visit. Discussing recommendations with their patients allowed them to engage in informed, shared decision making about their care.

Facilitators of Using the E-Consult Program

E-consult responses contained "timely and up-to date-information" that was useful and easily understood because it did not contain jargon. They appreciated that the e-consult was reviewed by an expert multidisciplinary team in transgender care and saw them as "coaches." Recommendations were said to provide a clear "road map" for where to start and how to proceed with care. The program was said to be "easy to access" and use through the VA EHR system, which also allowed for "easier for continuity of care" because information (e.g., test and treatment results) can be added, accessed together, reviewed, and incorporated into a patient's care plan.

They received responses in a "timely manner," ranging from two days to two weeks depending on the question, which was much shorter than other types of consults they requested in the past. Using the program also made providers aware of other existing health care services and resources (e.g., sexual and reproductive health care services). Some rural providers said they used the e-consult program because they believed it was their only available resource for patient-specific transgender health. In particular, providers at rural sites said there were no on-site providers or resources they could about care for transgender patients.

Barriers to Using the E-Consult Program

Providers said that entering the required information to submit an e-consult and reading the responses could be time-consuming. For example, they had to enter a lot of patient information, some of which was not directly relevant to their question (e.g., “Mental health things like suicide or homicide, interpersonal violence”). Some providers thought the template contained repetitive questions. Others said responses were too long (e.g., “If you printed it off, it would probably be like 20 pages long”) and not user friendly, including templated information and irrelevant information that they would not use. One provider was frustrated when the response did not address their question and suggested unrealistic and broad changes in their practice.

There were also communication-related issues with receiving the response and follow-up questions, some of which related to the technology central to e-consults. For example, it was unclear whether, in a situation with multiple e-consults for different questions about the same patient over time, providers should put in a new e-consult or add comments to their previous e-consult. Providers were also unable to follow recommendations because they found them to be impractical or unfeasible (e.g., too busy due to their existing workload). Some providers at rural facilities noted that they could not follow recommendations because they lacked the necessary local resources and the e-consult did not help them get access to the resources they needed. A few providers misunderstood the e-consult purpose, which led them to misuse the e-consult and question why their request was not met. For example, some providers thought it was a referral request that would result in other providers taking over their patient’s care. Some providers did not use e-consult due to a lack of understanding about transgender patients, including dimensions of gender (i.e., body, identity, expression) as well as their transgender-specific health care needs.

Suggestions for Improving the E-Consult Program

Providers suggested streamlining responses into sections to make them easier to read and

understand. Redundant or templated sections could be moved to the Transgender SharePoint on the VA intranet. They also suggested increasing provider and patient awareness of the program; for example, “Getting information out that, if the Veteran has concerns, they can go to their primary care clinics and get the process started, so they don’t have to go outside the VA.” Providers also suggested designating a point-person after an e-consult is completed so providers could follow up and have a dialogue, not just a one-sided, one-time response. They also suggested additional provider education through e-consult and the VA Specialty Care Access Network-Extension for Community Healthcare Outcomes (SCAN-ECHO) program about transgender-specific health care needs. Further, creating new programs would help educate providers about transgender Veterans, including dimensions of gender (i.e., body, identity, expression), and transgender-specific health care. They also suggested additional information and clarification be given to providers about the e-consult program’s operational processes and timeline for e-consults, including the estimated time required to enter an e-consult request and average wait time for a response.

Quantitative Evaluation

Overall Analysis

Comparisons of the three demographic characteristics between the census of providers who had seen a transgender patient during the study period and the simple random sample of survey participants showed no significant differences in facilities (p=.36), number of visits (p=.48), and number of patients (p=.31) (data not shown). Of the 279 eligible providers, 53 responded to the survey (19% response rate).

Providers were evenly distributed across disciplines (Table 3).

Table 3. Comparison between urban and rural providers in 53 provider surveys

	Urban (n=35) %	**Rural (n=18) %**	***P***
Discipline			

Social work	17	11	.83
Psychology	20	17	
Psychiatry	14	17	
Primary Care	14	17	
Nursing	14	22	
Other	20	17	
Number of years working in VA (mean)	7	7	.45
Training in transgender health prior to VA			
Yes, 1 hour	14	6	.70
Yes, 1-3 hours	23	17	
Yes, 3+ hours	14	17	
Training in transgender health while working with VA			
Yes	56	39	.24
No	44	61	
Ever used transgender e-consultation			
Yes	6	17	.20
No	94	83	
Reasons for not using e-consultation			
Did not know about it	47	67	.21
Do not know how to access it	20	28	.52
Have not needed to use it yet	34	28	.63
Comfortable with knowledge of transgender care	17	6	.24
Patient(s) told me they did not want me to use it	3	0	-
I have a colleague I can call on for help	31	11	.10
Template takes too long to complete	0	0	-
Suggestions to encourage use of e-consultation			
More information about where to find e-consult in the chart	51	61	.50
Have more time to complete an e-consult	17	22	.65
Seeing more transgender patients	31	28	.78
VA-wide e-mail announcements about the program	43	50	.62
Guidance on how to talk with patients about the program	51	44	.63

Among primary care, 5 were physicians and 3 were nurse practitioners. Ten individuals indicated "other," (i.e., nurse practitioner in gynecology, art therapist, blind rehabilitation, clinical pharmacy specialist, physician in physical medicine and rehabilitation, primary care provider (non-specific), certified nutrition specialist, psychiatric nurse practitioner, registered dietitian nutritionist, vascular surgeon, and inpatient physician). On average, the sample worked in the VA for 6.9 years (SD=5.3; range=<1-25 years). Thirty-five respondents (66%) indicated that they viewed their VA facility as urban, 15 (28%) indicated their facility was rural, and 3 (6%) indicated they worked in a highly rural facility.

Over half (53%) of the sample indicated that they had no training in providing transgender health care before working in the VA. Among those who reported that they had training prior to working in the VA, 11% indicated 1 hour, 21% indicated 1-3 hours, and 15% indicated <3 hours of training. Half of the sample (50%) indicated that, while they were working for the VA, they had some form of training about providing care for patients who are transgender.

Nearly one-third (32%) of the sample reported seeing only 1 transgender patient in the previous 12 months, and five (9%) indicated seeing no transgender patients in the last 12 months. The majority of the sample (87%) had seen 1-9 transgender patients over the last 12 months, and two providers indicated seeing more than 10 transgender patients.

The most common reasons for not using the e-consultation program were: not knowing about it, not needing to use it yet, and getting help from a colleague (Figure 1). The most common suggestions to improve program use were: more information about how to find and access e-consult through the electronic health record, VA-wide email announcements about the program, and guidance on how to talk with patients about the program (Figure 2).

Urban and rural differences

Post hoc exploratory analyses were conducted based on the self-reported locale of the providers. For these analyses, highly rural and rural respondents were combined because of the small number of providers in highly rural facilities. Overall, there were no differences between urban and rural providers (Table 3).

DISCUSSION

Expanding provider knowledge about transgender patients' needs can reduce misconceptions and stigma and facilitate high quality care provision [1,15]. The VA has improved transgender health care by becoming the first and largest US health care system to design and implement a national e-consultation program for transgender health care to "respond to specific inquiries on a case-by-case

basis" [10].

Because formal transgender health care is relatively new to the VA, it is crucial to understand health care providers' experiences with a program designed to enhance their practice. Lessons learned can guide improvement and inform other health care systems that may want to develop or replicate such a program. Some large health care systems have implemented e-consultation programs for a number of system needs, principally around facilitating low-cost connections with specialists and trying to keep continuity of care within the system [16-18]. The implementation of e-consultation as a relatively inexpensive, structural service that consolidates clinical expertise into an accessible resource can be a particular asset for vulnerable populations and the providers who serve them. Our study revealed these assets among providers caring for patients who are transgender (e.g., increased provider comfort with and confidence in transgender care provision) and elucidated the importance of the program to be lithe in response to provider's dynamic needs (e.g., structured responses to reduce response time).

Importantly, because the VA operates the single largest health care system in the US, we were able to specifically examine the experiences of providers at rural sites. Qualitative data showed that rural providers who have used e-consult faced some unique challenges to providing quality care to transgender Veterans. In particular, they did not have on-site providers who were knowledgeable and experienced with transgender-specific care that they could consult with about the Veteran. At times, they were even unable to follow e-consult recommendations they received for a specific patient because they were not feasible at their location. Thus, the e-consult program did not provide the local resources that were needed to follow their advice. These themes highlight a conundrum requiring more directed inquiry, such as exploring systems' capacity about how providers in rural areas can deliver the same quality of care their urban peers can deliver, consolidating e-consult responses to rural providers to develop tailored guidelines for providing transgender care in under-resourced areas, or convening systems-focused consensus meetings to bring together providers and

administrators from both urban and rural settings to discuss creative quality improvement strategies.

Furthermore, although quantitative analyses found no statistically significant differentiation between urban and rural providers, the results suggested that rural respondents may be less likely than their urban peers to indicate that they have colleagues to informally call on for help (11% vs. 31%, p=.10), reiterating that rural areas, generally, have limitations around health care infrastructure and availability of providers [19-21], which could have particularly negative effects for care of unique minority populations such as transgender individuals [22,24]. Further research is needed to construct a better understanding of transgender health from both providers and patients, specifically in rural contexts.

Our results dovetail with existing research findings that highlight ongoing barriers to providing quality transgender-specific care in VA and non-VA settings [25-28]. Although continually revised standards of care for transgender patients have been available through the World Professional Association for Transgender Health (WPATH) for over 2 decades [29], the majority of health care professionals do not receive training in transgender health [1]. For instance, in a survey of 132 deans representing medical schools in the US and Canada, one-third reported zero hours of LGBT-related content delivered during clinical training years and only 30% included gender transition within the required curriculum [30]. In a sample of nearly 250 3rd and 4th year medical students, only 56% chose the correct definition of the term “transgender” [31]. Unsurprisingly, some of the most oft-cited barriers to accessing care among transgender patients are the lack of knowledgeable providers (e.g., regarding transgender patients [i.e., body, identity, expression] and transgender-specific care) [15,32,33], or the patient having to educate the provider [4], which may be magnified for patients in rural and remote locations [22,34]. While medical training and curriculum need to include transgender topics [35], health systems face a concomitant, immediate need to equip current providers with necessary resources to provide transgender-specific health care for transgender patients.

Project Limitations

We note several limitations. The qualitative portion relied on self-reported data from interviews with providers who used the VA transgender e-consult program, which may not replicate direct observational data. Although our relatively small and homogeneous sample is appropriate due to our use of qualitative methods, we may not have captured the full range of provider experiences with the VA transgender e-consultation program. Notably, the majority of the sample had only use the e-consult program one time and one person had used it seven times; perceptions of the program could vary based on familiarity with it. Also, due to the nature of qualitative studies, our results may not be representative or generalizable; this limitation should be considered when interpreting the results and prior to applying our conclusions to other providers and settings.

In terms of the quantitative portion, the method by which providers were identified as having seen a transgender patient for the survey (i.e., the use of ICD-9 and ICD-10 diagnosis codes) was a proxy method of identifying transgender patients, so the sampling may have resulted in a conservative estimate of providers. The quantitative response rate was low, limiting the statistical power of analyses and generalizability of findings. Moreover, because we did not have data about the disciplines for the 14,502 providers in the universe from which we sampled, we could not ascertain if certain disciplines of providers may have been more inclined to respond to the survey, which may have introduced response bias. Future studies with more frequent and varied follow-up strategies to increase the response rate could alleviate issues of generalizability and response bias. Also, as a pilot study, the survey was limited in scope and did not collect additional information about providers (e.g., sex, race/ethnicity, granular data regarding specialty training).

Conclusions

This mixed-methods project offers insight into provider experiences with the VA transgender

e-consult program, and conveys lessons of implementation that can help guide other health care systems that may create a similar program (e.g., better and more frequent advertising of the program, infographics or examples about how to initiate an e-consult, or structured advice for providers to talk with patients about e-consult). Our results suggest that the program is useful to providers, but that there are several barriers to their utilization of the program. Additionally, rural providers face some unique challenges in care provision for transgender patients, including lack of access to necessary resources.

Future studies with a larger, more diverse sample of urban and rural health care providers, as well transgender Veterans who were involved in the e-consult program (i.e., patients must consent for their providers to submit an e-consult), are warranted. The present study focused only on the providers asking for e-consults and not the providers who answered the e-consults. Further research, perhaps in a dyadic manner, could better interrogate the entire course of utilizing e-consult. Additionally, a global study of VA e-consult would allow comparisons across consult content (e.g., diabetes, dermatology-related, transgender care) to discern challenges that may be universal to the e-consult format versus challenges that may be unique based on the health care need. Relatedly, examining transgender e-consultation from the patient perspective would allow the health system and its providers to learn about consumer experiences (e.g., patient-provider interactions, patient outcomes, or satisfaction) may be influenced through use of e-consult [36].

In closing, e-consult is a relatively low-cost systems improvement that health care organizations can implement to support providers in caring for transgender patients. As examples of best practice suggestions for transgender health accumulate [37-39], examples of feasible, in-house resources will be key for replication and adaptation across health care organizations.

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LIST OF ABBREVIATIONS

E-consult	E-consultation
EHR	Electronic Health Record
ICD	International Classification of Diseases
LGBT	Lesbian, Gay, Bisexual, and Transgender
SCAN-ECHO	Specialty Care Access Network-Extension for Community Healthcare Outcomes
US	United States
VA	Veterans Affairs
WPATH	World Professional Association for Transgender Health

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DECLARATIONS

Ethics approval and consent to participate: The qualitative activities reported here were conducted as part of a quality improvement initiative with the directors of VA's LGBT Health Program within the Office of Patient Care Services, as such, no human subjects approval or informed consent to participate were required. The quantitative portion was approved by the Institutional Review Board of the VA Pittsburgh Healthcare System.

Consent for publication: Not applicable.

Availability of data and material: The authors declare that the data supporting the findings of this study are available within the article.

Competing interests: All manuscript authors declare that there are no competing interests.

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Authors' contributions: Drs. Blosnich, Rodriguez, Gordon, Matza, Shipherd, and Kauth and Ms. Mejia contributed to the project concept and design. Ms. Hruska conducted the interviews. Ms. Hruska and Dr. Kavalieratos coded the interviews and Ms. Hruska and Dr. Rodriguez completed the qualitative analysis. Dr. Blosnich completed all quantitative analyses. All authors contributed substantially to the manuscript preparation and review.

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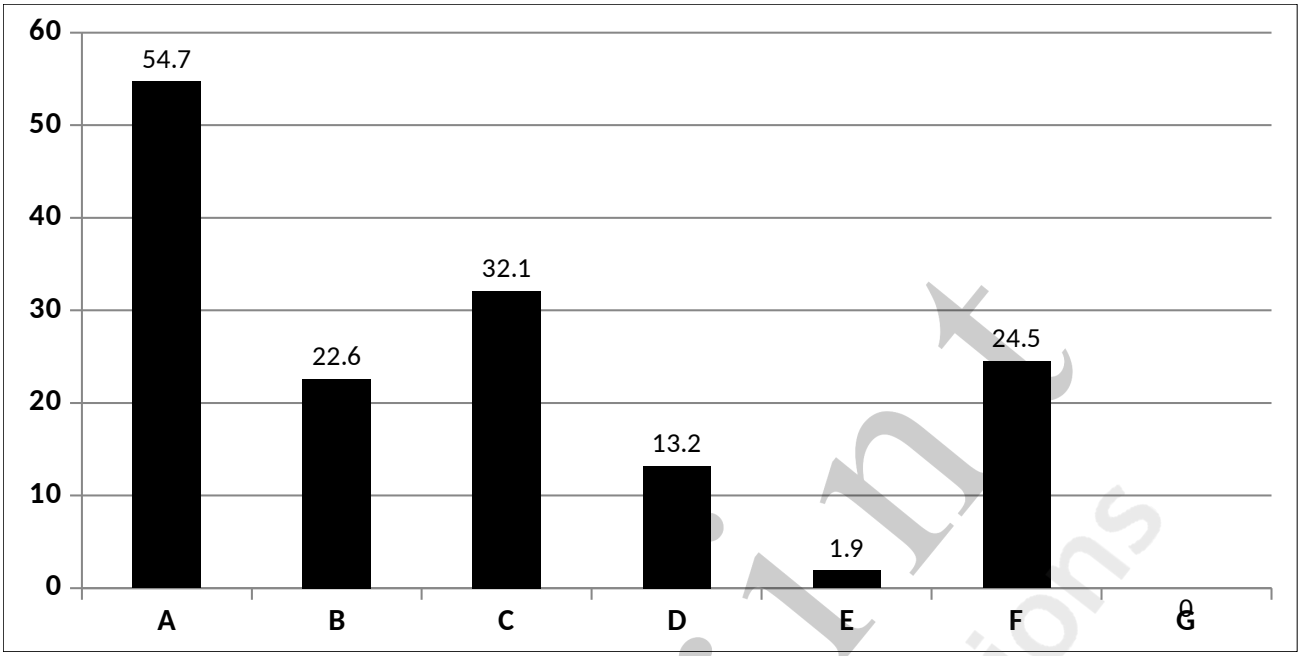
Figure 1. Reasons for not using e-consultation from 53 provider surveys



A=did not know about program; B=did not know how to access; C=have not needed to use it yet; D=comfortable with my knowledge of transgender care; E=patient did not want me to use it; F=call on a colleague; G=template takes too long to complete

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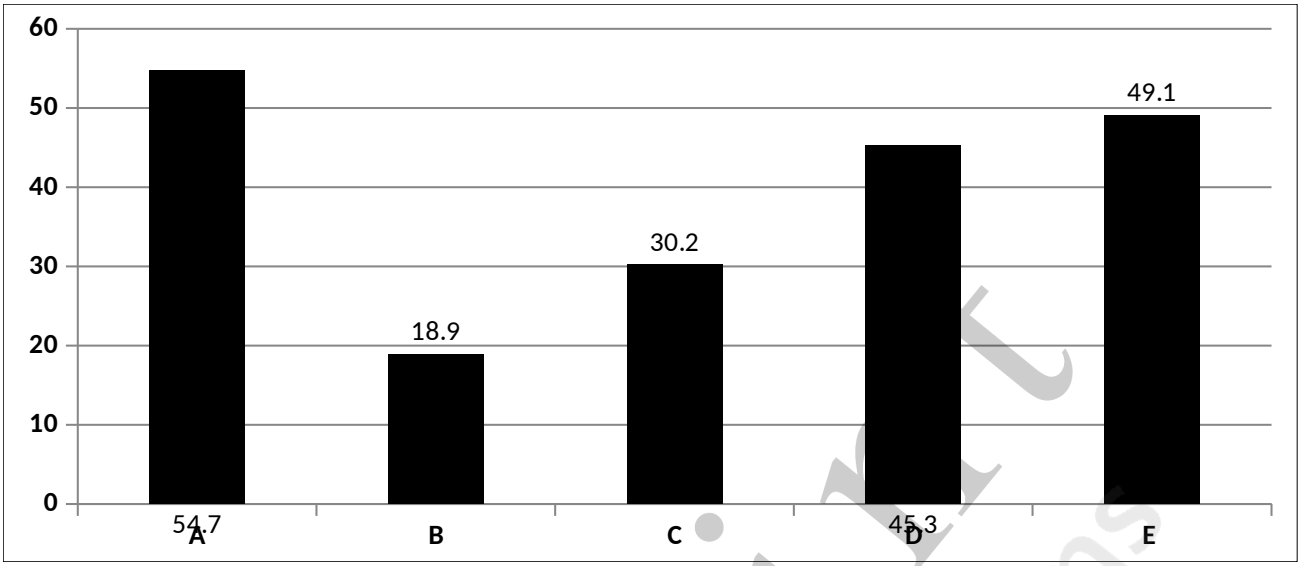
Figure 2. How to improve use of e-consultation from 53 provider surveys



A=more information about where to find e-consult in the chart; B=have more time to complete an e-consult; C=seeing more transgender patients; D=VA-wide email announcements about the program; E=Guidance on how to talk with patients about the program

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Figures

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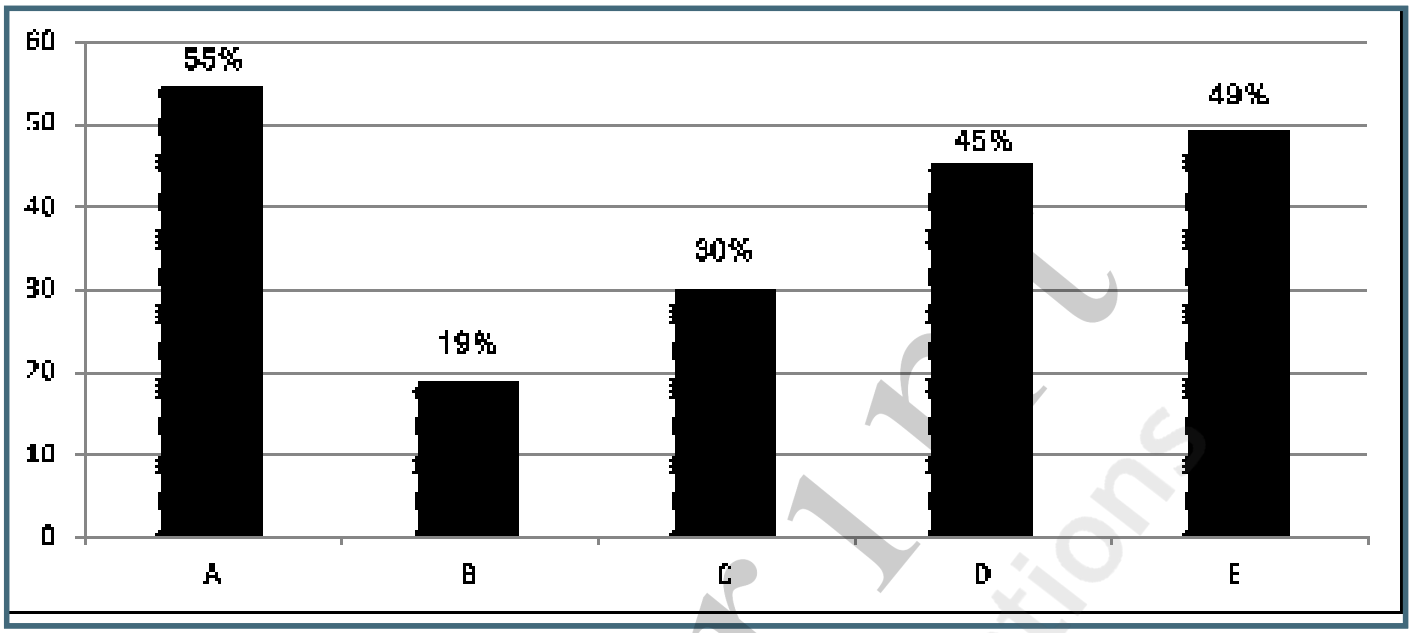
Figure 2. A=more information about where to find e-consult in the chart; B=have more time to complete an e-consult; C=seeing more transgender patients; D=VA-wide email announcements about the program; E=guidance on how to talk with patients about the program.



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